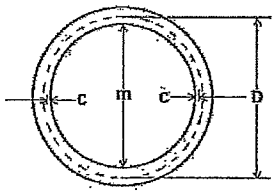
Brake Drums #1 Worksheet **Name** KEY



m + 2c < D **If the inequality is true, the brake drum is ok.**
If the inequality is false, the brake drum must be discarded.

1. The maximum diameter of a brake drum is 10.050 inches. The drum measures 10.030 inches. After machining .013 inch cut from the drum to remove score marks, you must determine if the drum is still usable. Can it be reused?

m = 10.030
C = 0.013
D = 10.050

$m + 2c < D$
$10.030 + 2(.013) < 10.050$
$10.030 + .026 < 10.050$
$10.056 < 10.050$ False → No, cannot be reused

2. The maximum diameter of a brake drum is 11.100 inches. The drum measures 11.037 inches. After machining 0.030 inch cut from the drum to remove score marks, you must determine if the drum is still usable. Can it be reused?

m = 11.037
C = .030
D = 11.100

$m + 2c < D$
$11.037 + 2(.030) < 11.100$
$11.037 + .060 < 11.100$
$11.097 < 11.100$
True - yes, can be reused

3. The maximum diameter of a brake drum is 12.080 inches. The drum measures 12.028 inches. After machining 0.024 inch cut from the drum to remove score marks, you must determine if the drum is still usable. Can it be reused?

m = 12.028
C = .024
D = 12.080

$m + 2c < D$
$12.028 + 2(.024) < 12.080$
$12.028 + .048 < 12.080$
$12.076 < 12.080$
True - yes, can be reused

4. The maximum diameter of a brake drum is 8.065 inches. The drum measures 8.027 inches. After machining .015 inch cut from the drum to remove score marks, you must determine if the drum is still usable. Can it be reused?

m = 8.027
C = .015
D = 8.065

$m + 2c < D$
$8.027 + 2(.015) < 8.065$
$8.027 + .030 < 8.065$
$8.057 < 8.065$
True - can be reused

5. The maximum diameter of a brake drum is 206.05 mm. The drum measures 204.8 mm. A score of 0.755mm is measured. Can the drum be resurfaced or must it be discarded?

m = 204.8 mm
C = .755 mm
D = 206.05 mm

$m + 2c < D$
$204.8 + 2(.755) < 206.05$
$204.8 + 1.51 < 206.05$
$206.31 < 206.05$
False - must be discarded

6. The only discard diameter of a brake drum that can be found is metric. It is 214 mm. You do not have a metric drum gauge. The drum measures 8.386 inches. A score of 0.020 inches is measured. Can the drum be resurfaced or must it be discarded? (1 inch = 25.4 mm)

$m = 8.386$ inches
$C = .020$ inches
$D = 214$ mm (1 inch = 25.4 mm)

$214\text{mm} \times \frac{1\text{ inch}}{25.4\text{ mm}} = 8.425$ inches

$m + 2C < D$
$8.386 + 2(.020) < 8.425$
$8.386 + .040 < 8.425$
$8.426 < 8.425$
False — must be discarded

7. Is (x, y) =(6, 10) a solution to the following inequality?

$y + 2x < 21$

$10 + 2(6) < 21$
$10 + 12 < 21$
False

8. Is (x, y) =(5.2, 9.7) a solution to the following inequality?

$4x + 7y < 89$

$4(5.2) + 7(9.7) < 89$
$20.8 + 67.9 < 89$
$88.7 < 89$
True